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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,431	11/21/2003	Kjell Kristoffersen	137682	3956

7590 04/17/2006  
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EXAMINER

JAWORSKI, FRANCIS J

ART UNIT	PAPER NUMBER
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3737

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/719,431	Applicant(s) KRISTOFFERSEN ET AL.	
	Examiner Jaworski Francis J.	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 - 27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>112103</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

The specification amendments filed 1/27/04 were reviewed for new matter and entered to the record.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 – 9 and 21 – 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 1 and also method claim 21, it is unclear whether the base claim's scope embraces the single transceiver channel case since the term 'elements' (plural only) is present in the preamble. For example, a transceiver likenable to applicants' in the sense of having electrically isolated transmitter – receiver inputs and outputs due to catheter-tip operation as found in Moore et al (US6511432) Fig. 3 has only a single element; similarly a transceiver so likenable to applicants as in Phelps et al (US6891311) when found in association with the unmultiplexed case of its Fig. 1 is operable per single channel on single element 20 or when found in association with MUX 26 inside 18 is operable for plural grouped elements 24, see also col. 5 lines 15 – 33. Are all of these case variants embraced by the claim 1 preamble? [Alternately stated for example, "a sleeping bag for people..." may mean in the informal sense 'for

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a person' or it may strictly refer to a plural person sleeping bag, and so the examiner is eliciting the clarification here.]

With respect to claims 6 – 7 the language 'coupled between multiple transducer elements' renders the claims indefinite since the base claim does not claim a transducer element-transceiver circuit combination but rather the latter subcombination for use with the former, whereas these claims inferentially introduce the elements into the claimed structure.

Dependent claims variously inherit the defects.

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 – 9 and 21 – 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Peterson et al (US6050945), or in the alternative under 35 USC 103(a) as obvious based upon Peterson et al in view of Phelps et al '311. Peterson et al is similarly directed to an apparatus and method for cross-blocking isolation of transmitter-to-receiver and vice-versa within channels for operation of an ultrasound array of elements, see col. 1 lines 27 – 32 and line 52 through col. 2 line 24, wherein in the embodiments of Figs. 6, 8 – 10 and 12 – 13 diode and transistor blocking circuitry including clamping and back-to-back diodes variously isolate coupling between the transmit and receive inputs and outputs, and otherwise discusses variously the use of step-up voltage transformers for transmission..

In the alternative, whereas Peterson et al refers to a receiver 'equipped with a pre-amp' and also does not otherwise literally refer to single diode elements as serving in a voltage clamping function, Phelps et al col. 5 lines 23 – 24 makes clear that a pre-amp or a filter alone such as is found in Peterson et al may constitute a 'receiver' if functioning as such; moreover the latter designate the various single diodes as clamp elements for example see discussion of elements 90, 92 in col. 12 lines 23 – 32.

Claims 10 – 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson et al in view of Phelps et al insofar as the latter teaches that transmit-receive isolation such as is practiced in Peterson et al may advantageously occur in association

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with multiplexing to reduce the number of cable signal paths when the array is two-dimensional, see col. 3 lines 30 – 64.

Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson et al in view of Phelps et al as applied to claim 10 above, and further in view of Larson, III (US 5229933, of record in the IDS filed 11/21/2003. Whereas the former are silent as to multiplexed patches, it would have been obvious in view of the latter col. 4 lines 19 - 27 to use subgroupings of rectangular patches including 2 x 2 patches in order to efficiently process signals in large numbers of processing channels.

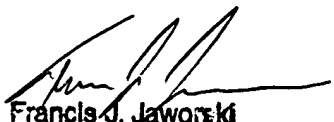
Claims 19 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson et al in view of Phelps et al as applied to claim 10 above, and further in view of Fraser (US6375617) since the latter teaches in figs. 14 – 15 that generally triangular patches of transducer elements may serve as ensonating units during microbeamforming using two dimensional arrays.

Angelsen et al (US6540677) is cited for col. 5 line 32 – col. 6 line 36 to complete the record.

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 571-272-4738.

FJJ:fjj

04122006

  
Francis J. Jaworski  
Primary Examiner